Section Four

Collecting & Storing Tire Information

Keeping appropriate records of your tire related data is the best source of information on tire performance, because they summarize your actual experience based on your equipment, your drivers, and your operating environment. They can help you to make cost effective tire purchase decisions and adjustments to tire and wheel maintenance schedules to better control costs.

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COLLECTING & STORING TIRE INFORMATION

Depending on the size of your fleet, tire data can be kept using a computer-aided method or simple paper files. Large fleets may need the huge information storage capacity and the networking capability of a computer. Small fleets may find the expense and complications of computer-aided information storage unnecessary. Whatever the method of storage, there are several common factors involved in tire data collection. Items recorded for tire performance records, at a minimum, should include:

- Tire Size
- Tire Brand/Type
- Initial Tire Cost
- Vehicle ID Number
- Vehicle Mileage at Installation
- Installation Date
- Tread Depth at Installation
- Recommended Inflation
- General Comments
- Actual Inflation
- Vehicle Removal Mileage
- Removal Date
- Tread Depth Removal

By building a base of information across the fleet, trends in tire performance can be established.

- How does mileage of Tire A compare to Tire B?
- Which tire brand produces the lowest cost per mile?
- Which tire has fewest adjustments?

A similar file can be used to track tire performance through retread life. Again, performance of various tread patterns, retread suppliers, and casing manufacturers can be closely followed. Decisions on future retread purchases can then be made on hard facts rather than perceptions and guesses.

Permanent identification of each tire can make the tracking from purchase to scrap easier. Tires could be branded, or a Radio Frequency Identification Chip could be added to the tire to provide a unique identity for that tire.

BRANDING TIRES

Several branding methods exist. Before branding, you need answers to several questions. What branding method is best for the quantities of tires involved? On what part of the tire is it "safe" to brand? How deep can a tire be branded without damaging the tire? Should you buy tires branded to your specifications or brand them yourself? Many fleets brand their own tires. Others, particularly large fleets, find it more cost-effective purchasing tires branded by the manufacturer or distributor. Three common branding methods include the "cold method," "hot method" and "mold branding."

Cold branding is somewhat of a misnomer because some heat is part of the procedure. In this method, pressure, air or hydraulic, is used to produce a brand that is legible and usually less damaging to the tire than the higher temperature hot method. Another advantage to cold branding is its ability to emboss brand. Numbers and letters are raised much like the markings on a new tire. Embossed brands are less damaging to the tire than the more common recessed brands though often more difficult to read.

Both cold and hot methods provide permanent brands but the higher temperatures of a hot branding iron encourage branding too deeply into the sidewall. Also possible is overheating the rubber compound around the brand and creating a brittle surface area that could initiate sidewall crack. If care is exercised, the hot method using medium heat will yield acceptable results. Always strive for the lowest possible temperature to produce legible brands without scorching sidewall rubber.

A third method is "mold branding." This is done when the tire is being manufactured. While this method offers the best appearance, it's available only when large quantities of tires are ordered and usually for only bias-ply tires.

Use lower sidewall area. Most truck tires have a special branding panel on the sidewall. It's located on the lower portion of the sidewall where little flexing occurs under normal use, thus reducing the chances of cracking.

If your tires don't have these panels, then brand in the lower sidewall area between the top of the rim flange and the "line" around the tire at its maximum width. Never brand near the maximum section width area of a radial tire. That's the tire's critical sidewall flexing area. If you're branding tires without panels and wish to brand both sides, then apply brands on opposite sidewalls 180 degrees apart.

How deep?

In general, you should brand truck tires between 1/32 inch and 2/32 inch in depth. Brands less than this depth range are often difficult to read. Those greater can result in cracking that may propagate away from the branded area, or worse, they may go deeper into the sidewall rubber. Eventually, these deep cracks might reach the outer surface of the casing cords. This could allow moisture into the casing which then could lead to degradation of casing durability.

RADIO FREQUENCY IDENTIFICATION TAGS

Passive radio frequency ("RF") identification devices can be molded into a tire or encapsulated in a patch and bonded to the inner liner of radial, medium and heavy duty, tubeless truck tires. Guidelines have been established by the *Technology and Maintenance Council* (www.tmc.truckline.com) to standardize the identification information provided by an RF transponder when it is installed during the tire manufacturing process, used in an aftermarket application in truck tires and provide minimum performance criteria for the use of this technology.

The transponder is a single chip, solid state, electronic device with an integral or external antenna. Each tag that passes within the radio frequency transmission range of a reader/interrogator will be energized and have its circuit turned on. In turn, the tag will respond by transmitting its encoded identification. The reader will receive the RF transmitted code and translate it into an alphanumeric tire identification.

RF TAG USAGE

Fleets may use RF tags for tire record keeping and maintenance as well as inventory. To ensure that RF tags are easily read and correlated with the proper tires, the following tire mounting procedures should be followed:

- A. Always mount tires with the DOT code side on the deep dish rim side of disc wheels, the fixed flange side of tube type demountable rims and the adapter side of tubeless demountable rims.
- B. The DOT code should be aligned with the valve stem so that local read RF tags can be located and found easily except in cases where match mounting takes a priority.
- C. Local read tags will then be readable on opposite sides when mounted as duals and will be readable on the inside of the steering axle except for directionally mounted tires.
- D. 360 degree read tags are not restricted by mounting.

Having well documented tire performance information allows intelligent decisions to be made on alignment intervals, recommended inflation pressures and tire brand or type choices.

Keeping appropriate records of tire information is a final step in achieving a lower cost per mile from tires. Having clear records not only helps decision making but also provides documentation of tire problems to be addressed by your tire company's representative.

After all, your goal as well as the goal of your tire representative is to provide you with the best tire for the job and to get all the mileage and service out of your tires that they can give.